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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,724	09/28/2001	Jean-Marie Aubry	2001-1443A	7009

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EXAMINER
PRICE, ELVIS O

ART UNIT	PAPER NUMBER
1621	

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/937,724	AUBRY ET AL.	
	Examiner	Art Unit	
	Elvis O. Price	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claims 12-16 are pending in the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton et al. {J. Chem. Soc., Perkin Transactions 1, 1975, pp. 1610-1614}, in view of Van Laar et al. {Chem. Commun., pp. 267-268).

Applicants claim a process for the oxidation of organic substrates by means of singlet oxygen, which consists essentially of adding 30-70% strength hydrogen peroxide to hydrophobic organic substrates which react with singlet oxygen in a monohydric C1-C8 alcohol as a solvent in the presence of a homogeneous molybdate catalyst, whereupon hydrogen peroxide is catalytically decomposed to give water and singlet oxygen, oxidizing said substrate to the corresponding oxidation products with precipitation of the catalyst, removing said precipitated catalyst by centrifugation or filtration and recycling said catalyst to said oxidation.

Barton et al. teach a process for the oxidation of a hydrophobic organic substrate which consists of adding a homogeneous molybdate (ammonium or sodium molybdate)-hydrogen peroxide catalyst (30% peroxide was used to make the catalyst) to the substrate(s) in the presence of a monohydric C1-C8 solvent such as tertiary butanol

(see pg. 1612, second column, experimental section). The difference between the presently claimed invention and what is taught by the Barton et al. reference is that Barton et al. do not explicitly teach that the oxidative reaction takes place by means of singlet oxygen and Barton et al. are silent about the reaction temperature and the recycling of the catalyst. However, since the Barton et al. disclosure is primarily concerned with the singlet oxidation of phenols is would not have been unreasonable for one having ordinary skill in the art to expect that the said oxidative reaction taught by Barton et al. proceeds via singlet oxygen oxidation. Additionally, recycling of the same material catalysts taught by Barton et al. would be an obvious procedure to one having ordinary skill in the art, absent any unexpected results.

Van Laar et al. teach that singlet oxygen can be generated from alkaline hydrogen peroxide in the presence of homogeneous metal ion catalyst such as molybdate (see first paragraph of page 267).

Thus, it would have been *prima facie* obvious to one having ordinary skill in the art to arrive at the presently claimed invention, because Barton et al. teach an oxidation process which consist of adding 30% hydrogen peroxide to hydrophobic organic substrates in an organic solvent in the presence of a homogeneous catalyst (ammonium molybdate or sodium molybdate) and Van Laar et al. teach that singlet oxygen is generated as a reactive species, from alkaline hydrogen peroxide in the presence of homogeneous metal ion catalyst such as molybdate. Additionally, one of ordinary skill in the art would have expected that the reaction temperature of the Barton et al.

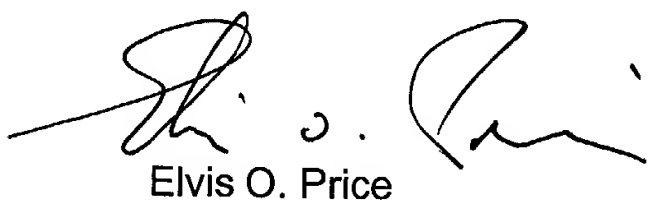
oxidation process was room temperature since Barton et al. were silent about the reaction temperature.

The skill artisan would have been motivated to oxidize organic substrates as presently claimed, in view of the teachings of the Barton et al. and Van Laar et al. references, using the molybdate-hydrogen peroxide homogeneous catalyst taught by Barton et al., so as to arrive at alternative means, depending on cost and availability of the said catalyst system, for oxidizing hydrophobic organic substrates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elvis O. Price whose telephone number is 703 605-1204. The examiner can normally be reached on 8:30 am to 5:00 pm; Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 703 308-4532. The fax phone numbers for the organization where this application or proceeding is assigned is 703 308-4556 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-1235.



Elvis O. Price

December 11, 2003